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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/661,189
Filing Date: September 12, 2003
Appellant(s): HANKS ET AL.

Steven Ormiston
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 18th, 2008 appealing from the Office action mailed March 21st, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2002/0191517	Honda et al.	12-2002
3,426,337	Black et al.	2-1969

5119363	Sato et al.	6-1992
4987301	Nakamura	1-1991

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 4, 7, 13, 15, 16, 19-21, 25-29, 34, 35, 38-40, 45, 46, 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda et al. (US 2002/0191517) in view of Black et al. (US 3,426,337).

Regarding claim 1:

Honda discloses:

A method to sense the speed of an optical disk (paragraph 37) having a tracked data side on which data may be stored and an untracked non-data side (paragraph 30), the method comprising:

rotating the disk (paragraph 37);

determining a rotational speed of the disk (paragraph 37); and

controlling a rotational speed of the disk (paragraph 37).

Honda does not disclose:

A method of using electromagnetic radiation to sense the speed of the disk;

wherein the disk includes a pattern of reflective and non-reflective regions or a pattern of magnetic and non-magnetic regions aligned circularly about the disk, the pattern being positioned on an inner rim or on an outer rim of the disk, or both, outside a label area in which images may be formed on the non-data side of the disk, the method comprising:

sensing, with a stationary detector, a frequency of electromagnetic radiation radiating from the pattern on the rotating disk;

determining from the sensed frequency a rotational speed of the disk; and

controlling, with the sensed frequency, a rotational speed of the disk.

Black discloses a method of using electromagnetic radiation to sense the speed of a disk,

wherein the disk includes a pattern of reflective and non-reflective regions or a pattern of magnetic and non-magnetic regions aligned circularly about the disk (Fig. 1; column 4, lines 15 to 40), the pattern being positioned on an inner rim or an outer rim of the disk, or both (column 4, lines 1-20: Black discloses the "data area" and the pattern may be separate. If there are two areas, one must be either inside or outside the other, and thus on an inner or outer rim of the disk. Of course, in Honda the "data area" is the label area in which images may be formed on the non-data side of the disk),

the method comprising:

sensing, with a stationary detector, a frequency of electromagnetic radiation radiated from the pattern on the rotating disk (column 4, line 65 to column 5, line 5);

determining from the sensed frequency a rotational speed of the disk (column 5, lines 35-70); and

controlling a rotational speed of the disk (column 5, lines 35-70).

Black discloses that it is "highly desirable" to be able to control position in direct reference to the disk itself (column 1, lines 40-60). Note also that Black teaches detecting the radial position (column 2, line 55 to column 3, line 40) with the method also.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include in Honda wherein the method includes using electromagnetic radiation to sense the speed of an optical disk having a tracked data side on which data may be stored and an untracked non-data side (already including in Honda) that includes a pattern of reflective and non-reflective regions or a pattern of magnetic and non-magnetic regions aligned circularly about the disk (as taught by Black), the pattern being positioned on an inner rim or an outer rim of the disk, or both (as taught by Black), outside a label area in which images may be formed on the non-data side of the disk (the two areas may be separate as per Black column 4, lines 1-20), the method comprising:

rotating the disk (already present in Honda);

sensing, with a stationary detector, a frequency of electromagnetic radiation radiating from the pattern on the rotation disk (taught by Black);

determining from the sensed frequency a rotational speed of the disk (taught by Black); and

controlling, with the sensed frequency, a rotational speed of the disk (taught by Black).

The motivation would have been to control position in direct reference to the disk; Black, as noted, indicates this is highly desirable.

Regarding claim 3:

In Honda in view of Black the pattern comprises a spoke pattern (seen in Black Fig. 1).

Regarding claim 4:

In Honda in view of Black the pattern comprises a gear-tooth pattern (seen in Black Fig. 1).

Regarding claim 13:

Honda in view of Black discloses:

A device for interacting with an optical disk having a tracked data side on which data may be stored and an untracked non-data side (Honda paragraph 30) that includes a pattern of reflective and non-reflective regions aligned circularly about a rim of the disk (taught by Black as discussed above), the device comprising:

a rotation device configured to rotate the disk (Honda paragraphs 36-37);

an electromagnetic radiation source directed at the rim, wherein electromagnetic radiation radiated from the reflective regions of the pattern originates from the electromagnetic radiation source directed at the rim (part of the teaching of Black: column 4, line 50 to column 5, line 5);

an electromagnetic radiation sensor configured to sense a frequency of electromagnetic radiation radiated from the reflective regions of the pattern (Black column 4, line 50 to column 5, line 5); and

a controller coupled to the electromagnetic radiation sensor, the controller configured to, with a sensed frequency of electromagnetic radiation radiated from the reflective regions of the pattern, control a rotational speed of the disk (Honda already endeavored to control the rotation speed, as per paragraph 37. Black teaches controlling it using the electromagnetic radiation as previously discussed) and establish an absolute reference for a radial positioning on the untracked non-data side of the disk (the spoke pattern is used to establish the radial position, as taught by Black: e.g., column 2, line 55 to column 3, line 40. Thus the pattern establishes "an absolute reference for a radial positioning.").

Regarding claims 15-16:

All elements positively recited have already been identified with respect to earlier claims. No further elaboration is necessary.

Regarding claim 19:

In Honda in view of Black the rotation device includes:

a spindle coupled to the disk when the disk is installed in the device (seen in Honda Fig. 6) and

a motor coupled to the spindle (labeled "spindle motor" in Fig. 6).

Regarding claim 20:

In Honda in view of Black the controller includes a motor controller configured to control the motor (Honda paragraphs 36-37).

Regarding claim 21:

All elements positively recited have already been identified with respect to earlier claims. No further elaboration is necessary.

Regarding claim 25:

In Honda in view of Black the controller includes a radial positioner for controlling a placement of a beam of the electromagnetic radiation on the disk (Honda paragraph 38).

Regarding claim 26:

Honda in view of Black discloses:

A mass storage device having media that is rotateable, comprising:

means for sensing electromagnetic radiation with a stationary sensor from a pattern of reflective and non-reflective or magnetic and non-magnetic regions aligned circularly about a rim of a trackless non-data side of the media, the pattern being positioned on an inner rim or on an outer rim of the disk, or both, outside a label area in which images may be formed on the non-data side of the disk (taught by Black as discussed above);

means for controlling the rotational speed of the media based on the sensed electromagnetic radiation (taught by Black as discussed above);

means for positioning radially over the label area an electromagnetic source with respect to a surface of the trackless non-data side of media based on the sensed

electromagnetic radiation (this is part of the teaching of Black: Black's method detects both the rotating speed and the radial position, as in Black column 2, line 55 to column 3, line 40); and

means for controlling exposure of the media by the electromagnetic source in conjunction with the means for controlling and the means for positioning (taught by Black).

Regarding claims 27-29 and 34::

All elements positively recited have already been identified with respect to earlier claims. No further elaboration is necessary.

Regarding claim 35:

Honda in view of Black discloses a mass storage device as discussed above.

Honda in view of Black does not disclose wherein the means for controlling rotational speed includes a motor controller configured to control the rotational speed of the media to 0.25 meters/second at an accuracy of 0.02 percent.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include these speeds and accuracies.

The motivation would have been: in the course of routine engineering optimization/experimentation to determine the necessary print accuracy. Moreover, absent a showing of criticality, i.e., unobvious or unexpected results, the relationships set forth in these claims are considered to be within the level of ordinary skill in the art.

Additionally, the law is replete with cases in which the mere difference between the claimed invention and the prior art is some range, variable or other dimensional limitation within the claims, patentability cannot be found.

It furthermore has been held in such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range(s); see *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Moreover, the instant disclosure does not set forth evidence ascribing unexpected results due to the claimed dimensions; see *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338 (Fed. Cir. 1984), which held that the dimensional limitations failed to point out a feature which performed and operated any differently from the prior art.

Regarding claim 38:

All elements positively recited have already been identified with respect to earlier claims. No further elaboration is necessary.

Regarding claims 39, 40, and 45:

These claims are to a program storage system readable by computer for implementing the earlier method claims: Honda Fig. 6 shows that the apparatus is controlled by a computer. All other elements of these claims have already been identified with respect to earlier rejections.

Regarding claim 46:

Honda in view of Black discloses a program storage system as discussed above.

Honda in view of Black does not disclose wherein "controlling a rotational speed of the disk includes controlling the rotational accuracy of a spindle onto which the disk is fixed to allow placement to within a quarter of a pixel at 600 dpi on the disk.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include this print accuracy.

The motivation would have been: in the course of routine engineering optimization/experimentation to determine the necessary print accuracy. Moreover, absent a showing of criticality, i.e., unobvious or unexpected results, the relationships set forth in these claims are considered to be within the level of ordinary skill in the art.

Additionally, the law is replete with cases in which the mere difference between the claimed invention and the prior art is some range, variable or other dimensional limitation within the claims, patentability cannot be found.

It furthermore has been held in such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range(s); see *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Moreover, the instant disclosure does not set forth evidence ascribing unexpected results due to the claimed dimensions; see *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338 (Fed. Cir. 1984), which held that the dimensional limitations failed to point out a feature which performed and operated any differently from the prior art.

Regarding claim 51:

All elements positively recited have already been identified with respect to earlier claims. No further elaboration is necessary.

Regarding claim 52:

The method of Honda in view of Black includes wherein sensing the reference pattern comprises scanning the reference pattern with a first light and detecting light reflected from the pattern (taught by Black as discussed above) and the method further comprises, based on the establishing, positioning a second light radially on the disk (the second light is the printing laser of Honda).

Claims 17, 30, and 32 rejected under 35 U.S.C. 103(a) as being unpatentable over Honda in view of Black as applied to the claims above, and further in view of Nakamura (4,987,301).

Regarding claim 17:

Honda in view of Black discloses a device as discussed above.

Honda in view of Black does not disclose wherein "the electromagnetic radiation source includes a coherent electromagnetic radiation source."

The electromagnetic radiation source was taught by Black. Black does not disclose whether the source is coherent or non-coherent (although, since Black was filed in 1964, it is probably non-coherent).

Nakamura discloses that electromagnetic radiation sources used to track disc speeds are typically coherent (lasers: Nakamura, column 1, lines 5-30).

It would have been obvious to include in Honda in view of Black wherein the electromagnetic radiation source is a coherent source, because coherent and non-

coherent sources are used in the same environment, for the same purpose, and achieve the same result (this is shown by Nakamura's "typically:" clearly it is not necessary). Furthermore, one of ordinary skill would have expected Applicant's invention to work equally well with a non-coherent source.

Regarding claims 30 and 32:

These claims are similar to claim 17 and similarly rejected.

Claims 18, 31, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda in view of Black as applied to the claims above, and further in view of Satoh (US 5,119,363).

Regarding claim 18:

Honda in view of Black discloses a device as discussed above.

Honda in view of Black does not disclose wherein "the electromagnetic radiation source includes a non-coherent electromagnetic radiation source."

The electromagnetic radiation source was taught by Black. Since Black was filed in 1964, the electromagnetic radiation source taught by Black is probably a non-coherent source; nonetheless, Black does not explicitly disclose this.

Satoh disclose wherein an electromagnetic radiation source (used in the same environment for the same purpose) is a non-coherent radiation source. Satoh discloses this avoids the need to use a laser (column 5, lines 1-20; column 2, lines 45-55).

It would have been obvious to one of ordinary skill in the art to include in Honda in view of Black wherein the electromagnetic radiation source includes a non-coherent electromagnetic radiation source.

The motivation would have been to avoid the need to use a laser (this would be cheaper).

Regarding claims 31 and 33:

They are similar to claim 18 and are similarly rejected.

(10) Response to Argument

Applicant has made numerous arguments, sorted under subheadings under each ground of rejection. For convenience and clarity, the arguments will be addressed in the same order, using the same heading structure.

To sum them up, Applicant's arguments essentially fall into two types: first, that Honda in view of Black does not teach an "open loop control system," and second, because the pattern taught by Black extends over most of the disc, it doesn't meet the claim language and/or wouldn't work.

The first argument is not persuasive because an open loop control system is not claimed. The second argument is not persuasive because Black explicitly states that the pattern does not have to extend over most of the disc, and that the pattern area can be in a separate section from the rest of the disc surface.

Now to address the arguments in order:

GROUND NO. 1

Applicant first addressed the rejection of claims 1, 3, 4, 7, 13, 15, 16, 19-21, 25-29, 34, 35, 38-40, 45, 46, 51 and 52 as obvious over Honda in view of Black.

"Establishing An Absolute Reference Outside A Label Area for Radial Positioning Inside The Label Area (Independent Claims 13, 39 and 51)"

In this section, Applicant first argues that Black does not teach "establishing...an absolute reference."

Applicant admits that "absolute" is not specially defined in the application, but argues that its meaning must be "a fixed point or location to which all radial positioning may be referenced."

Applicant then argues that Black teaches finding the current position on the disc, not establishing a fixed point to which all positioning may be referenced. Applicant goes on to argue about the merits of closed loop versus open loop control systems.

Here Applicant is arguing subject matter that has not been claimed. If Applicant wishes to claim an open loop control system where an initial point is established from which all subsequent radial positioning is referenced in an open loop system, Applicant is welcome to claim this. The current claim language does not include any of this subject matter. Applicant insists that the mere inclusion of the word "absolute" somehow requires all of these unstated limitations, but the basis for this argument is not clear.

According to the American Heritage College dictionary, fourth edition, the word "absolute" can mean "perfect in quality or nature; complete."

What the claim actually states (using claim 13 as an example) is that the controller is configured to "establish an absolute reference for radial positioning." In Honda in view of Black, the controller is configured to find the current location and based on that location, perform radial positioning. That current location can be reasonably considered to be "an absolute reference" since it completely defines the current location on the disc.

Applicant next argues that the reference pattern is positioned outside the label area, and used to establish a position inside the label area. Applicant argues that in Black the transducer must be over the reference pattern in order to know the location.

Nonetheless, Honda in view of Black discloses a pattern outside the label area used to establish a position inside the label area. This comes from the teaching of Black that the "data area" (which is the label area of Honda) and the pattern area may be separate areas on the disc (Black column 4, lines 1-20). Since Black uses a separate transducer to read the pattern from the one used to read/write information (in Honda, the one used to print the label), it's possible to have these patterns on separate areas of the disc and yet still use the pattern to establish a position inside the label area.

"Black Teaches Away From Open Loop Position Control (Independent Claims 13, 39, and 51)"

In this section, Applicant argues that Black teaches a closed loop system and therefore "teaches away" from open loop position control.

Since open loop position control has not been claimed, this argument is irrelevant. As noted in the discussion above, Honda in view of Black meets a reasonable interpretation of the claim language.

"Speed Control Based on Sensing A Pattern Outside The Label Area (Independent Claims 1, 13, 26, 29, and 51)"

Here Applicant argues that Black's reference pattern extends across nearly the entire disc, and therefore Honda in view of Black does not disclose speed control based on sensing a pattern outside the label area.

Again, Black discloses (column 4, lines 1-20) that the "data area" and the pattern may be separate. When this teaching is applied to Honda, the "data area" of Black is the label area of Honda, and therefore the label area and pattern are separate.

"The Combination With Black Renders Honda Inoperative (Independent Claims 1, 13, 26, 39, and 51)"

Here Applicant argues that the pattern disclosed by Black extends across nearly the entire disc, and therefore it would cover the label area and make it useless.

However, again, Black discloses (column 4, lines 1-20) that the "data area" and the pattern may be separate. When this teaching is applied to Honda, the "data area" of Black is the label area of Honda, and therefore the label area and pattern are separate. There's nothing in Black that requires the reference pattern to extend over a large portion of the disc.

GROUND NO. 2

Here Applicant argues that claims 17, 30, and 32 are allowable because the independent claims are allowable. Since Applicant's arguments with respect to the independent claims were not persuasive, this argument is not persuasive either.

GROUND NO. 3

Here Applicant argues that claims 18, 31, and 33 are allowable because the independent claims are allowable. Since Applicant's arguments with respect to the independent claims were not persuasive, this argument is not persuasive either.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

CRL 9/4/08

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